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PRACTICAL RECOMMENDATIONS

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EXCLUSION AND PREVENTION

OF

ASIATIC CHOLERA

IN NORTH AMERICA.

AN ADDRESS

Delivered at the Opening of the National Conference of State Boards of Health, St. Louis, October 13, 1884.

BY

JOHN H. RAUCH, M. D.,

Secretary, Illinois State Board of Health.

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PRACTICAL RECOMMENDATIONS

FOR THE

EXCLUSION AND PREVENTION OF ASIATIC CHOLERA

IN NORTH AMERICA.*

By JOHN H. RAUCH, M. D., Secretary, Illinois State Board of Health.

MR. CHAIRMAN:

A grave responsibility rests upon those charged with the protection of the public health at the present time. For the past six years—ever since the memorable Fever-Summer of 1878—the country has been free from any serious and widespread epidemic disease. Small-pox, which prevailed from 1880 to 1883, has been successfully combatted, and its ravages confined to proportions which are insignificant when compared with many other epidemics. Hundreds of thousands of unprotected immigrants were landed on our shores during those four years; but the Immigrant-Inspection Service, inaugurated in the spring of '82, thenceforth rendered them comparatively harmless, by securing an improvement in their sanitary status through the effect of the Service upon the work of steamship surgeons during the voyage, and upon the methods at quarantine on arrival; as well as by its own sanitary surveillance of the immigrants from the port of arrival to the point of ultimate destination or distribution in the great interior—such surveillance consisting of repeated inspections, vaccination of the unprotected, systematic observation of suspicious sickness, prompt isolation of discovered small-pox or other contagious disease, and the enforcement of the measures necessary to prevent its further spread. Among our own people outbreaks of the disease were promptly suppressed wherever sanitary authority had control, and well-defined methods of dealing with the contagion were enforced. On the other hand, while we have fought small-pox and conquered it, we have been spared from any serious conflict with yellow fever. Nor have other diseases prevailed to an unusual extent, as they so often do in the absence of an epidemic. On the contrary, the average annual death-rate has been low, and during the past year remarkably so.

This very fact should be, in itself, a warning to the sanitarian. It means a survival of a large number of persons who would have been carried off had the non-epidemic diseases maintained their usual severity. It means the accumulation of susceptible material ready for the prey of epidemic contagion, whenever such contagion shall be introduced under conditions favoring its propagation and spread. It is one of the most important factors in determining the extent and severity of the next epidemic, whatever that may be and whenever it may visit us.

But, for a period of six years sanitary effort and sanitary authority have had no unusual demand made upon them, or at least no demand which the public recognizes as unusual. And during these six years the interest in sanitary matters, which was aroused by the epidemic of 1878, and which, among other causes, led to the formation of many of the present State Boards of Health, and to the creation of the National Board, has gradually diminished as the memory of the epidemic faded away, or was displaced by other and newer topics and occurrences.

One of the chief reasons why sanitary work fails to receive continuous and adequate consideration and support from the public and from the legislator, is that, in its very essence, it is a work of prevention; and just in proportion to its own success and thoroughness does it destroy the obvious and palpable reasons for its continuance. When an epidemic actually exists, and industry and commerce are paralyzed in its presence, and the death-roll swells from day to day, there is then no question in the public mind about the desirability of sanitation, no hesitation as to making appropriations for its support, or enacting legislation to increase its efficiency.

*An Address, delivered at the opening of the National Conference of State Boards of Health, held in the city of St. Louis, Mo., October 13-15, 1884.

But Rabelais told us, nearly four hundred years ago, what always happens whenever the devil gets well. And Congress adjourned its last session, not only without doing anything additional for the protection of the public health, but after substantially annulling and rendering inoperative the only National legislation of any real value which we possessed.

HOWEVER, there is a revival of public interest in these matters within the past few months, due to the spread of Asiatic cholera in Southern Europe; and it is our present duty, as sanitary officials, to utilize and direct that interest to the securing of adequate legislation and intelligent action for the prevention of the introduction of the pestilence to our shores, and its limitation, should it unfortunately effect an entrance. Much has already been done in the latter direction, by the action of State and local health authorities in pushing the sanitary education of the people through circulars, memoranda and other modes of appeal. Since the second of July last such circulars from sixteen States and from the Dominion of Canada have already come under my notice. In many instances, sanitary inspections of municipalities, public institutions, jails, almshouses and kindred establishments, have been ordered and carried out, with the view of securing the abatement of nuisances and remedying defects in the sanitary conditions thence disclosed. An amount of sanitary work has been thus already accomplished, which, aside from any consideration of cholera, will be of great value in reducing sickness and mortality from the entire list of diseases which are caused or favored by filth and other insanitary conditions. As a recent number of the N. Y. Medical Record says: "There is no doubt that the extra cleanliness produced by the cholera scare will effect a saving of life from other filth diseases far in excess of the mortality from the cholera itself, unless, indeed, it should spread beyond all expectation."

This work should be continued, and the measures which have already been inaugurated, looking to improvement in general and local sanitation, should be pushed with unabated vigor during the favorable weather we may yet have; and they should be resumed with redoubled energy whenever climatic conditions permit. It is not necessary to go into details as to this work: we are familiar with its requirements and its necessity. It is a work of continuous interest and importance, whether cholera should come or not.

WITH theories and speculation as to the causation of cholera, or as to its mode of diffusion and epidemic spread in the countries of the Old World, this CONFERENCE is not specially concerned. It is enough for us to know, as the basis of our action, and the foundation for practical recommendations and advice, that the disease is not indigenous to this continent; that it is an exotic, and has never yet visited us except by importation, and that only after ample warning.

It may be entirely true that, if all our food-supplies were wholesome, and our water-supplies not only unpolluted but unpollutable; if sewage and refuse disposal were prompt and complete; if our cities, towns and villages were all models of sanitary perfection, and their inhabitants free from predisposition or susceptibility, acquired or inherited—in short, that if there were no ignorance, nor poverty, nor filth, nor infirmity in the land, we might dispense with precautions against the introduction of disease.

But the sanitary millennium is not yet, and we are hardly likely to witness its advent before next spring or summer, no matter how earnestly we may labor for it. So, for the present, at least, as a practical sanitarian accustomed to deal with conditions as they actually exist, I think the wise thing to do in respect of cholera is to resist the first beginnings—obsta principiis.

It is no doubt well to be prepared to expel the midnight burglar from one's dwelling; it is better to keep him out by locks and bolts and watchful patrols. If people must live among combustible material it is a prudent thing to forbid smoking on the premises, and to be careful about matches and other incendiary agencies, the contagion or contact of which may kindle a conflagration.

Until we can very materially change the conditions which cause considerably over one-half the annual mortality, it is our simple duty to adopt whatever measures promise a fair degree of success in excluding the foreign epidemics. Such typical filth-diseases as typhoid fever and diphtheria carry off sixty-odd thousand people every year; and during the census year ten principal groups of more or less preventable diseases caused over 470,000 out of the total 756,000 deaths in the United States.

With such a showing it is simply nonsense to talk about relying upon sanitary measures alone to combat a disease like cholera. Let us push sanitation by every means in our power, and to the fullest extent. Not, however, with any hope that we can effect such a sanitary revolution in a few months as would prevent cholera, if once introduced, from spreading as an epidemic in many localities, which, in the nature of things,

cannot be reformed in many months. But rather in the knowledge that every sanitary reform tells permanently and continuously on the whole body of preventable diseases; and that to the extent and measure of such reforms are the conditions made more favorable for the exclusion and prevention of all epidemics.

THAT cholera *will* come, it is our duty to assume. Mindful of the history of every previous cholera epidemic, we must accept as beyond a doubt—if experience is worth anything—the certainty that the disease will be brought to our shores. It always has come, sooner or later, whenever, since 1832, the contagion has obtained such a foothold in Europe as it now has.

Sooner or later, and we cannot tell how soon. Cholera was brought to Marseilles in the early part of June, 1865, from Bombay via Mecca, by pilgrim-steamers conveying Algerine pilgrims returning home from the feast of sacrifices at the "holy city," and spread so rapidly that, during the month of October, it caused between four and five thousand deaths in Paris. On the 12th of that month the steamer Atalanta left Havre with over 600 cabin and steerage passengers all of whom had been in Paris, and on her arrival in New York bay she had had 102 ca es of cholera and 23 deaths. So that the disease was brought from its endemic home in India, by way of Mecca, Marseilles, Paris and Havre, to New York in less than nine months.

It is probable that we do not know how widely spread the disease is upon the continent, nor what places and ports are infected. The London Lancet recently stated that it has transpired that there were deaths from Asiatic cholera in Marseilles during 1883, and Dr. Albert Drysdale, health officer at Mentone, writes to that journal corroborating the statement from his own personal observation, having been taken to see a case in October, 1883, by a medical friend. Attendants, nurses and all others cognizant of the facts were sworn to secresy. Still more recently French naval officers have frankly stated that cholera existed on their vessels at Toulon long before the fact was made known last spring. In 1873 the existence of cholera was concealed in Austria on account of the great Vienna exposition, and although the disease is now known to have been spreading from place to place from early in the spring, it was not until midsummer that any warning was sounded of an epidemic which caused 240,000 deaths in the Austrian dominions alone.

I repeat that we may not know how widely spread the disease now is on the European continent, and that we do not know how soon its arrival on our own shores may be announced. It is not probable, however, that it will reach us before next spring, and we may pretty safely count on some months yet in which to push our preparations to meet it and to resist its advance. Even though a few cases should now be received the season is so far advanced that they probably would cause no epidemic spread.

I BEGAN my remarks with the statement that a grave responsibility rests upon the sanitarian at the present juncture; but there is an equally weighty obligation resting upon the public and upon our legislators. I undertake to say, as a sanitary official of nearly twenty-five years' experience in the practical administration of sanitary matters in city, State and Nation, and after more than a third of a century of study and observation of the disease, begining in 1850—that Asiatic cholera may be practically excluded from the United States: That it is pre-eminently a quarantinable disease. That, with a judicious employment of agencies which have already been tested, Asiatic cholera may be quite as successfully dealt with in this country as small-pox, and probably more so than yellow-fever.

Whether cholera shall be excluded—whether the means and agencies necessary to deal with it shall be supplied—are questions which the public must answer through their representatives in Congress, in State legislatures, and in their municipal councils; and I propose in the remaining portion of these remarks to endeavor to point out what means and agencies are necessary to the end in view; premising that, in their consideration, it should be remembered that sanitary science is comparatively modern; that the sanitary organizations of the present day had no existence in the days of the great epidemic visitations of cholera in this country; that within the past few years there has been a rapid and wide-spread diffusion of sanitary knowledge among the people; and that, even so lately as the last cholera epidemic in the United States, that of 1873, no organized effort was made to prevent the importation of the disease, and practically little or nothing done to prevent its extension; certainly, no such measures have ever been employed, either to prevent its introduction or to limit its spread, as we have recently successfully employed against small-pox and yellow fever.

ASIATIC cholera—so far as this country is concerned—is pre-eminently a quarantinable disease. Unlike the virus of small-pox, unlike the poison of yellow fever, the morbific

potency of the cause of Asiatic cholera—whatever that cause may be—is sharply limited as to duration. Failing to find suitable conditions for its growth and reproduction it *dies out.* No single case, no single shipload of cases ever succeeded in establishing an epidemic in this country. I know this is contrary to the received opinion and popular belief; but I ask you to follow me in a brief resumé of the facts concerning each epidemic, beginning with 1832. That epidemic is attributed to the ship Carrick, which arrived at the Grosse Isle quarantine station in the St. Lawrence river on the 3d day of June, 1832. But six days before that, the ship Elizabeth had arrived with 200 immigrants on board, and having had 20 cholera deaths during the voyage. Fourteen days before the Elizabeth the Robert had arrived, with 10 cholera deaths; and sixteen days before the Robert—that is on the 28th of April, thirty-six days before the arrival of the Carrick—the ship Constantia arrived, having had 29 cholera deaths during the voyage. These are all known to have been cholera-infected vessels, and their hundreds of passengers were known to be cholera-carriers; but these passengers are only a small fraction of the 30,000 immigrants who arrived in the St. Lawrence during the spring and early summer of 1832, from the same infected localities and sailing from the same infected ports as the passengers of the Constantia, the Robert, the Elizabeth, and the Carrick. And yet they failed to develope a single case in Canada or elsewhere until the 8th day of June. The introduction of the disease into New York is attributed to Canada; but the same class of immigrants from the same localities in Europe, were arriving in New York during the spring of '32, as those in the St. Lawrence. And yet no case of the disease occurred in the city or vicinity until June 13th.

In 1848, the noted cases of the New York and the Swanton occurred—the former carrying cholera into New York, the latter into New Orleans; and to them is attributed the epidemic which, in the two succeeding years, spread from the Atlantic to the Pacific and from Canada to the gulf. But the importation by the New York, though causing fifty deaths at quarantine, resulted in only two cases in New York city, and it was not for months afterward—not until the 11th day of May, 1849, and after the arrival of several other ships with cholera on board, that the first case appeared in the city, and the disease began to spread from that point. On the other hand, immigration from cholera-infected districts of Europe into New Orleans had been continuous for months before the arrival of the Swanton—the two vessels immediately preceding her, viz. the Gutenburg and the Callao, having lost 25 passengers from cholera.

From this time until the close of what is generally known as the epidemic of 1854, but which was really only a continuation of the epidemic of 1848-49, there were continual importations of cholera-carriers, either in the persons of those who had been exposed, or in cholera-infected articles; in November, 1853, for example, no less than 28 vessels, on which 1,141 persons had died of cholera, arrived at the port of New York alone.

The case of the Atalanta, in 1865, has already been noted; but it should be further observed that there were three other arrivals from Havre soon after, and on the last two of these there were deaths from cholera during the voyage; but the disease got no nearer the city than Ward's island, and by the 20th of December had entirely ceased. In 1866, cholera was carried into Halifax by the steamer England, which vessel afterwards proceeded to New York, where, on the 20th of April, she landed 891 passengers and 116 officers and men, having lost 316 by cholera. There were eight cases and five deaths among those who had to do with the vessel at Halifax, but no other extension of the disease, and none in New York. Two days prior to the arrival of the England, the Virginia had arrived at New York quarantine, having had 116 deaths on the voyage; and before the first death of the epidemic of 1866 had occurred, namely, May 2d, there had been nearly 3000 arrivals in New York of individuals "who had been directly exposed to the infection of cholera at Liverpool, on shipboard, and at quarantine." Notwithstanding this, so slowly does cholera spread, except under favorable conditions, that there had been only 21 deaths from the disease up to July 8th; and it was not until the first week in July that the disease appeared in Brooklyn, although there were frequent arrivals of cholera vessels, during all this time.

The epidemic of 1873 was preceded—*fourteen months before the first case of the epidemic occurred*—by the arrival of the Franklyn at Halifax, November 6th, 1871, in distress, having lost 28 of her steerage passengers by cholera. Five cases, with three deaths, resulted from her on shore, but the disease did not spread, either in Halifax or vicinity. The vessel proceeded to New York, where she arrived November 12th, 1871, having lost 11 more of her passengers, and having 72 cases then on board. But no epidemic followed. During 1872 there were numerous arrivals from cholera-infected ports, and the disease appeared on the island of Cuba and in Jamaica in the autumn of that year. During December, 1872, and January, 1873, there arrived at New Orleans a total of nearly two

thousand immigrants from cholera-infected districts of Europe. And yet it was not until the 9th day of February, 1873, that the initial case of this epidemic occurred in the city of New Orleans.

No SINGLE case of cholera, no one shipload of cases has ever yet sufficed to establish an epidemic of Asiatic cholera on this continent. It has only been after repeated importations of the contagion in the persons of thousands of immigrants and in their infected baggage and household goods, that it has effected a lodgment, and has reproduced itself and multiplied into an active epidemic agency.

Hence my first proposition, that, for this country, the disease is essentially and preeminently a quarantinable disease, and may be practically excluded. If it were true of the cholera poison, as it is of the small-pox contagion, that favorable conditions for its spread exist wherever a susceptible individual is found, without reference to the sanitary surroundings, we should have no such history as I have just recited,—a history of repeated importations extending over months and months before it succeeded in establishing itself.

It will not do, however, to construe this tardy establishment of the contagion into an excuse for delaying measures of preparation—neither those for its exclusion, nor those for its limitation and suppression, should we fail to exclude it. Cholera is a capricious disease, and the history of its various pandemic extensions throughout the Old World affords instances of a single introduction sufficing to inaugurate an epidemic. Fortunately, the conditions favorable to such a prompt epidemic spread do not, generally, obtain with us, except in a few localities. Populations are not so dense, nor are dwellings so saturated with crowd-poison, nor is the soil so thoroughly polluted by long occupancy. Where these evils exist they should be remedied forthwith to as great an extent as practicable, in order that, among other good results, the conditions favorable for the growth and multiplication of the cholera-poison may be destroyed or limited.

IT is charged that quarantine is powerless to prevent the extension of epidemic diseases; that, in the language of John Simon, "a quarantine which is ineffective is a mere irrational derangement of commerce;" and that to be effective, it must be of such a nature as to absolutely prevent all intercourse with the infected country. All this may be true of Great Britain, owing to her geographical position, to her extensive commerce and its exigencies, to her dependence on other countries for her food supply, and to other conditions which do not obtain with us. It may also be true of Europe generally. There, a narrow strait or sea, a river, a mountain chain, or merely a territorial boundary line, with its custom houses and passport system, defines the limits to be guarded, and forms the only physical barrier between the quarantiner and the quarantined. Here, the whole width of the Atlantic intervenes between us and the infected country. There, cordons and quarantines mean privation, misery and suffering, and, ultimately, starvation. Here, the Nation is self-supporting, and could exist unaffected in almost all her material interests. There, it may be true, as alleged, that a quarantine of exclusion is impossible of execution, and that the attempt to maintain it does more harm than good, in leading to numberless contraband practices by which the disease may be introduced in unsuspected ways.

None of this is true when applied to the exclusion of Asiatic cholera from this country; while to accept the statements unquestioned would cause vigilance to be relaxed, would invite contagion to our shores unimpeded, and would finally throw upon individual communities the burden and the responsibility of fighting the disease at an immense disadvantage—that is, of fighting it at home and from many quarters, instead of on the outer lines and from only one direction.

With the necessary agencies of an effective quarantine provided in due season, it would not require any very great degree of courage to promise the practical exclusion of the disease.

THESE necessary agencies may be thus stated in their natural order of sequence:

First.—Timely and trustworthy information of the existence of the disease in countries and at ports having commercial relations with our own, including telegraphic advices of the departure of vessels from such ports for ports in this country. Section 1752 of the Revised Statutes of the United States gives the President authority to use all diplomatic and consular officers for "the communication of information * * * conducive to the public interests;" and instructions have already been issued under this authority.

To properly utilize this information, in fact, in order to fully secure the information, there needs to be—

Second.—A National health organization, representing the natural sanitary divisions of the country; endowed with adequate authority; supplied with means commensurate

with the duties imposed upon it; and with the power to call upon any other branch of the public service of the United States for legitimate assistance and coöperation. With some modifications the present National Board of Health would satisfactorily meet this indication. In my judgment its membership should be enlarged so as to more perfectly represent the natural sanitary areas, and its members should be familiar not alone with the sanitary features of their respective districts, but equally they should be identified with the commercial, business and industrial interests.

Under this National health organization there should be extended and perfected—

Third.—The system of Refuge Stations projected by the National Board of Health. With two or three exceptions, no port in the United States has adequate facilities for the proper administration of quarantine. Such a system as was inaugurated by the National Board of Health, and which is the only quarantine contemplated in these remarks, involves the removal of an infected or suspected vessel out of the track of commerce; the segregation of her sick from the well; the proper care and shelter of both these classes; the necessary disinfection of infected cargo, and the purification of the vessel; and the release of vessel, cargo and persons, so soon as they have been rendered safe and free from the danger of communicating disease.

THIS is very different from a mere quarantine of detention. It is the American quarantine of sanitation, a common-sense quarantine, which aims to prevent the introduction and extension of contagion, not by merely arresting it at a given point and there leaving sick and well at its mercy until, the susceptible material having become exhausted, no more cases of the given disease occur; but by removing the susceptible at once from its influence, and then destroying it and the conditions necessary for its existence by scientific methods of disinfection and purification.

To do this, however, requires a quarantine plant and facilities far beyond the means of any but the largest ports, supported either by abundant quarantine fees or by adequate appropriations from the State or municipality. But cholera may obtain access at a small port as well as at a large one, and hence the necessity for the Refuge Stations above indicated.

Under the system here outlined the departure of a vessel from a cholera-infected port would be at once cabled to the National health officer; the authority at the port of destination would be duly notified; pilots for such port would be ordered to take the vessel to the nearest Refuge Station; and at such station, under the charge of a National officer, and at the expense of the National government, she would be so treated as to make it impossible that she could land cholera-contagion in our midst.

SO MUCH for the measures which should be adopted for the exclusion of the disease—measures which have already been practically tested sufficiently to demonstrate their feasibility and value. But before dismissing this branch of the subject it will be well to consider the possibility that it may be necessary to absolutely prohibit immigration, for a time at least, from infected countries. Every one of our cholera epidemics has been directly and unmistakably traceable to the arrival of immigrants infected in person or in baggage and household goods. It was the crowded troop-ship and transport which brought the contagion into France from China and Egypt. It is the crowded pilgrim-steamer and passenger vessel which carries it from Bombay and Calcutta into Europe and elsewhere, as already instanced. It is the steerage of the immigrant vessel, with its crowd-poison and other conditions favorable to the development of a specific contagion, which we have to fear. This contingency is one of the most important against which National legislation should be provided next winter.

I HAVE said that I believe Asiatic cholera may be as successfully dealt with in this country as small-pox—notwithstanding that we have no such demonstrated prophylactic for the former, as vaccination is for the latter disease; that it may, probably, be more successfully dealt with than yellow fever—notwithstanding that this is limited by climate and temperature, while cholera is independent of the one and only measurably affected by the other. I believe this to be the case as the result of my own official experience. In the last two epidemics of cholera, the disease was controlled wherever it appeared in the localities under my supervision, by the adoption and enforcement of the simplest measures. Surface wells were fouled with carbolic acid, so that their use for drinking and culinary purposes was necessarily abandoned, and a pure water supply was provided instead. Every house where a case of cholera appeared was promptly taken charge of by the sanitary authorities; the patient was isolated; discharges were disinfected and buried; all other sources of infection were carefully looked after, and the premises, generally, were put in the best attainable sanitary condition; and with marked results upon the extension and progress of the disease. Every community, for itself, may readily provide

a similar mode of dealing with a cholera outbreak, should the disease, unfortunately, be introduced.

But something more than this is needed in order to perfect the sanitary defense of the whole country. For this we must have coöperation and concert of action. We must devise a plan whereby the limited and individual powers of communities and States may supplement each other and act harmoniously and efficiently for the common welfare. In the exercise of its police powers—upon which all its sanitary laws and ordinances are founded—the municipality is confined within its own limits, or, for certain purposes, to a short distance beyond. The power of the State is in like manner limited by its own boundary lines.

In the absence of a National health organization, with power to act without reference to State lines and with resources to meet every emergency, the best we can now do is to form an organization of all those clothed with sanitary power and authority, both State and municipal:—an organization which shall give effect to the principle that we are each our brother's keeper in whatever pertains to the prevention of the introduction and spread of epidemic contagion. Such an organization as the Sanitary Council of the Mississippi Valley, supervising—and if need be maintaining—a system of sanitary surveillance similar to the River and Rail Inspection Service in the Valley, and the Immigrant-Inspection Service of the recent small-pox epidemic, will be of great value in a two-fold manner.

It will enable State and municipal authorities to aid each other and to make their rules and regulations substantially uniform, and thereby to secure the coöperation and assistance of transportation companies and other commercial interests, whose business success depend so largely on freedom from unnecessary interruption or conflicting and changing restrictions. It will be of positive sanitary value in the moral pressure exerted on the individual agents of travel and traffic.

Here in the Valley, a great improvement in the sanitary conditions of steamboats, barges and river craft, and, to a minor degree, in the care of railway cars, depots and outbuildings, followed the knowledge that the detention for inspection depended upon the experience of the inspector with regard to the particular boat or line. In the same way the conditions of immigrant travel were sensibly improved by the Immigrant-Inspection Service, not only on our railroads, but on the ocean steamers themselves. Its effects were also manifested in the administration of the seaboard quarantines, to which the Service was a direct help in securing a prompter and more general compliance with the quarantine requirements of the different ports.

This latter point is one of great importance to the interior. Illinois, for example, is as much interested in maritime quarantines as are communities bordering upon the Atlantic and the Gulf of Mexico. During my own official experience the State has repeatedly suffered from the laches and inefficiency of their administration. Her sanitary interests are protected or endangered through them along the whole line from the mouth of the St. Lawrence to the mouth of the Mississippi, and even to the Rio Grande. Means of communication and intercourse are now so multiplied that time and space—in respect to contagious diseases—are practically annihilated; and methods which might have sufficed for the protection of the interior twenty-five years ago would be, to a great extent, valueless to-day.

In 1873, for example, there were outbreaks of epidemic cholera at Carthage, Ohio, Kandiyohi county, Minnesota, and Yankton, Dakota, caused by cholera poison packed up in the household effects of emigrants in Holland, Sweden and Russia, repectively; these emigrants sailed from healthy ports, in healthy vessels, and were subjected to the usual sanitary requirements of the period. They passed through New York and all the intermediate territory without injury to the public health. But when their infected goods were unpacked in the interior of the continent they liberated the poison which gave rise to the local outbreaks.

To guard against a possible recurrence of such importations—which have been often paralleled in my experience with regard to small-pox among immigrants, and through which importations, both of cholera and small-pox, the interior is affected while the port of arrival escapes—no ordinary system of quarantine, controlled by a State or municipality alone, will suffice. Prompt and trustworthy information, such as the General government only can obtain, concerning the sanitary history of all emigrants during the existence of cholera in Europe, is obviously necessary to this end.

Sooner or later the National government will be compelled not only to assume supervision of exterior quarantines, but to provide for a permanent system of coöperation with State and local governments in the administration of inter-State sanitation; in order, on the one hand, to prevent the introduction of exotic epidemic diseases, and, on the other,

to prevent their spread from State to State along the great intra-National highways of travel and commerce. This is a National duty. It is one that the National Government only can adequately discharge, and its expense is, equitably, one which should be defrayed from the National treasury.

Such an organization as I suggest will be one agency for securing the assumption of this duty by the General government; and the present emergency offers a favorable time for pressing its consideration. Heretofore, legislation in the interest of public health has been obtained, as a rule, at the tail-end of an epidemic. It has too often been in the nature of a locking of the stable-door after the horse was stolen. Let us now see if we cannot reverse the process, and, while there is yet time, induce not only Congress, but States and municipalities to take the necessary action for securing a better protection of the public health.

JUST now this means more than the good to be found in the saving of human life and in avoiding the suffering and misery, the ruined homes and desolated families which an epidemic always leaves in its track. It means the prevention of panic; it means the prevention of the interruption of trade and commerce; it means the prevention of the loss of millions of dollars, all of which would inevitably result from an epidemic of Asiatic cholera in this country. Already the disease has cost Southern Europe not less than a hundred million dollars—six million dollars up to October 1st in trying to prevent its spread in Italy alone, with a loss of four million dollars even in the month of August, before the disease had effected a serious foot-hold; and now it is announced that the decrease of the national revenues of France has been materially aggravated by the reduction of receipts from railways, caused by the cessation of travel consequent upon the prevalence of the cholera epidemic. And yet Europe is only upon the threshold of this epidemic, if we may judge from the past.

Shall we be warned in time, or shall we wait until the pestilence has landed and obtained a foothold? A single outbreak—possibly a single case—of Asiatic cholera in New York, or Chicago, or St. Louis or New Orleans, in our present condition, would cost the country millions of dollars, even though no epidemic spread should result.* With a perfectly feasible quarantine system, whose entire cost would not be a tithe of this sum, the chances of that single case may be made exceedingly remote. With an adequate sanitary organization—embracing within its scope the National authority, the State and the municipal, each in its respective sphere—not one case, nor one hundred could establish an epidemic. Such an organization of the sanitary defences would inspire public confidence and prevent panic in the face of real danger—and panic is one of the worst complications of a cholera epidemic, as fear is one of the most potent predisposing causes of the disease.

No comparison is possible between the most liberal estimate of the cost of the methods of exclusion and suppression here proposed and the cost of an epidemic. The money cost in both cases, may, it is true, be calculated; but who shall place a dollars-and-cents' value on the lives which would be sacrificed, and the suffering entailed by an epidemic of Asiatic cholera?

OUR duty, our responsibility, and our opportunity, seem to me plain and obvious. So far as pushing general and local sanitation go, I believe we are doing fairly well; and to this extent we are reducing the chances of the spread of cholera, should it effect a landing through defective or wanting quarantine provisions. The next work that lies close to our hands is to inform the public as to the necessity of securing adequate legislation—National, State and municipal.

Congress must be urged to reorganize and rehabilitate the National Board of Health, or to provide an efficient substitute—one clothed with increased power and supplied with ample funds to maintain an effective system of modern sanitary quarantine for the exterior; to maintain an interior sanitary inspection service for the great highways of travel by land and water; and to give judicious coöperation and substantial assistance to States and municipalities in preventing the introduction of epidemic diseases into one State from another, and in preventing their spread within the States themselves.

Congress should give the President the power to issue a proclamation, upon the recommendation of the National health authority, forbidding immigration into the United States from infected districts of other countries, and it should provide some method of international sanitary coöperation between this country and the Dominion of Canada, whose interests are substantially the same as ours in these matters, and whose contiguity makes coöperation of vital importance.

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*In 1879 the report of a single case of yellow fever in the South caused a shrinkage in the provision market, in Chicago alone, which amounted to a million of dollars within twenty-four hours.

In States which now have no boards of health, or whose boards are not vested with the necessary authority or provided with adequate resources, the people should be awakened to the necessities of the situation. Legislators should be thoroughly informed as to the facts and urged to provide suitable legislation.

Information on sanitary matters should be widely diffused to this end, and also to the end that, if an epidemic should come, we may not have to encounter the obstacles which ignorance is always ready to put in the way of what it does not understand. Happily, in this country we are not likely to meet with the treatment that the superstitious peasantry of France and Italy have accorded their physicians and health officers. But sanitary education and knowledge cannot be too widely spread.

THESE are matters which may profitably occupy much of our time and attention for the next two months; and I would suggest that when this meeting of the CONFERENCE adjourn it be to meet again in Washington early in December, for the purpose of conferring with the President, the proper Cabinet officers and the committees of the Senate and House as to the legislation which should be asked for at the next session of Congress. To this meeting I think not only should representatives of State Boards of Health be invited, but also all quarantine officers and the health authorities of the large cities, as well as those of the Dominion of Canada. I would also suggest that quarantine officers and those who are responsible for the local sanitation of towns, cities and States should be requested to come prepared to give all necessary information concerning the quarantine and sanitary affairs of their respective ports and localities.